Agriculture Subcommittee on Agricultural Processing

Recommendations on Barriers to Maintaining and/or Attracting Agricultural Processing in Michigan

Subcommittee members: Rep. Cindy Denby, Chair
Rep. Charles Brunner
Rep. Marcia Hovey-Wright
Rep. Joel Johnson
Rep. Bruce Rendon

The subcommittee began hearings on February 9, 2011 and continued hearings weekly until March 16, 2011. Presentations were given by many representatives of the agricultural industry in Michigan. We'd like to extend a thank you to all those involved in arranging these presentations and those taking the time to give testimony to this subcommittee. This report was approved by the subcommittee on April 27, 2011. A motion was made, seconded and passed that support for this report does not commit any member to a vote on any particular legislation.

Throughout the course of the subcommittee hearings, several concerns were heard and potential solutions given. These were gleaned through the testimony, written submissions and meetings with various stakeholders. Attached are the submissions from various sources.

Recommendations:

I. ***Establish a workgroup with a firm timeline.*** Various barriers were discussed and differing solutions presented in many different areas. Because of the broad spectrum of solutions suggested, it is recommended that a workgroup shall include representatives such as those from state agencies, the scientific community, food processing, environmental and legislators that will build consensus on the following issues and potential solutions:

A. Environmental Regulations (using Quality of Life approach)

1) Bring transparency to permitting process and fees.
2) Provide for education on permitting and compliance, such as compelling MDARD & MDEQ to hold very specific food processor workshops (i.e.,one for all the apple processors)
3) Access to water can be an important factor in locating agricultural processing facilities. In areas of the state where additional water withdrawals may result in adverse resource impacts, the department should facilitate the formation of water users committees to work toward voluntary agreements that allow agricultural processors to access water resources necessary for efficient operation (MCLA 324.32725).

1) Agricultural processing is considered to be industrial for the sake of zoning, permits, etc. Many of the processing operations are not industrial in many ways. Being able to designate some processing in as "agricultural" or defining a new use definition would be beneficial.

2) Elimination or changing Renaissance Zones has been discussed. If Ren zones are eliminated, there will need to be a focus on restructuring to provide some type of designation or incentive for agricultural processing.

Recomendations continued:

II. The Julian-Stilles Value-Added Act has not been funded for several years. Funding incentives by allowing food processors use of the 21st Century Jobs Fund through the MEDC is imperative. (Already passed by the legislature, with expectation the Governor will sign during the last week of April.)

III. Currently food processing byproducts are classified as industrial waste. Many of these are actually usable as products to be sold or used by other producers or manufacturers. Reclassify the non-hazardous process residuals that are usuable as products from low hazard solid waste to valuable by-product and reduce testing requirements to allow for agricultural use exemptions.

IV. The district offices and the state office of the MDEQ seem to have a disconnect. Ensure that district offices and the state office are using identical, written criteria based on law and approved rules to avoid sending mixed messages.

V. Small water discharge operations pay the same fees as large operations. Modified language to the Part 22, Groundwater Quality Rules, Rule 2211 would reduce the fee from a current $1,500 to $200 for discharges under 500 gallons per day, but does not eliminate fees entirely. It places this category of discharge in line with the other low volume discharges described in Rule 2211 such as Laundromats that discharge less than 500 gallons per day. The change was suggested by MDEQ and is attached. The proposed change is in caps.

VI. Agricultural processing equipment is considered taxable under the personal property tax. The Governor has indicated he will be proposing changes to the personal property tax. After hearing those proposals, work to include eliminating agricultural processing equipment from personal property tax if possible considering the impact to municipal government.

VII. Discussion with public utilities on how they can provide resources to allow for expansion or creation of agriculture processing facilities needs to occur. Lack of utilities to support expansion or new operations was a major concern.

VIII. There needs to be real, meaningful collaboration and cooperation between state departments and agencies that work with food processors. The only way to grow agricultural processing will take a concerted effort by the state to make sure there is an attitude of teamwork throughout state efforts. Many anecdotal incidents describing

SUMMARY:

The above issues are all very important to the expansion and/or attraction of food processing operations. The following paragraph, taken from the summary of the MSU Product Center working paper from September 2010 titled "The Economic Impact of the Michigan Food Processing Industries" sums up the testimony we heard from most stakeholders:

"However, to be successful, barriers to enhanced processing need to be addressed. While there are several barriers to enhanced processing, there appears to be only one that has a particularly adverse affect on food processing, waste water treatment and handling. Policies that would allow the effective and efficient disposal of waste water would improve the ability to expand Michigan's food processing activities. Such expansion generates new direct investment in facilities and equipment and fosters economic growth; particularly to rural areas, many of which are facing high rates of unemployment. Building up Michigan's food processing sector not only generates increased demand for Michigan farm products but also sets in motion secondary impacts that benefit all sectors of the economy"

Thank you to all those who took the time to testify before the subcommittee:
Mike DiBernardo, Economic Development Specialist, MI Department of Agriculture
Jim McBryde, MEDC on the 21st Century Jobs Fund
Ray Van Drissche, Michigan Sugar
Mitch Miller, CEO, CarbonGreen BioEnergy
Lyndon Kelly, MSUE, Irrigation Specialist
Mike Schena, General Manager, Better Made Potato Chips
Dr. Mike Hamm, MSU
Jim Byrum, MI Agribusiness
Jim Janiczek, DEQ, Water Discharge
David Hamilton, DEQ, Water Withdrawal

Attachments:

1) Recommendations for the Legislature from Michael W. Hamm, MSU
2) Statement on Food Processing submitted by:
   Michael W. Hamm, C.S. Mott Professor of Sustainable Agriculture, MSU
   Patty Cantrell, Principal, Regional Food Solutions
   Kathryn Colasanti, Academic Specialist, C.S. Mott Group for Sustainable Food Systems, MSU
3) Executive Summary of the Michigan Good Food Charter
4) MSU Product Center working paper from September 2010 titled "The Economic Impact of the Michigan Food Processing Industries"
5) Suggested changes by the DEQ for Part 22 Groundwater Quality (Jim Janiczek)
6) Food System Infrastructure: Michigan Good Food Work Group Report Series

Statement Submitted to the
Michigan House Subcommittee on Agriculture Processing
April 2011

Michael W. Hamm, C.S. Mott Professor of Sustainable Agriculture, Michigan State University
Patty Cantrell, Principal, Regional Food Solutions
Kathryn Colasanti, Academic Specialist, C.S. Mott Group for Sustainable Food Systems, Michigan State University

Introduction: Michigan's Opportunity in Processing for Regional Markets

Michigan is a food-processing powerhouse compared to many states. We are home to household brand names like Kellogg, Gerber, and Eden Foods, and we have extensive processing capacity across our major commodities, from cherries, apples, and sugar beets to dry beans and dairy.

Also powerful, but often overlooked, however, are literally *hundreds* of other companies among Michigan's more than 2,200 food and agricultural processing plants.[1] They are the old Polish sausage makers, the new artisan bakers, specialty cheese makers, and everyday smaller processing facilities that serve the state's broad and diverse range of farm and food entrepreneurs.

Michigan ignores these entrepreneurs at its economic peril: the future includes important roles for these smaller, regionally-focused processors and their communities. Markets are demanding more product variety, regional identity, and customized services. Michigan's smaller scale processors, both old and new, are in prime position to help the state's farm and food entrepreneurs supply this growing demand. They have the flexibility and the specialty orientation needed to respond to new tastes while working with a diverse range of farmers and food buyers.

But Michigan must tend to these smaller scale food and agricultural processing opportunities if existing ones are to grow and new ones are to emerge. The necessary tasks of updating existing plants, developing business plans and building connections among smaller-scale food and agricultural businesses may not be headline news material; but they amount to the kind of "economic gardening" that Michigan Governor Rick Snyder, among others, knows will grow jobs, investment, and prosperity across the state.

By supporting these entrepreneurs in a more committed and comprehensive way, the MSU Strategic Marketing Institute projects that Michigan could increase the rate of agri-food startup successes[2] to a projected 851 per year and the state could generate 23,020 direct and indirect jobs per year as a result.[3] The report notes that nearly half of the jobs could

---

[1] Michigan Food and Agricultural System Profiles, produced in 2009 at the Michigan Department of Agriculture and Rural Development. Available online at http://www.michigan.gov/documents/mda/Michigan_Food_System_Profile_292926_7.pdf

[2] "Startup success" here refers to the U.S. Census Bureau term "establishment births," which are establishments that have zero employment in year t and positive employment in the first quarter of year t+1.

[3] Peterson, H.C., Knudson, W.A., Abate, G. (2006) "The Economic Impact and Potential of Michigan's Agri-Food System, Strategic Marketing Institute Working Paper." The Product Center at Michigan State University, No. 1-1606, January.

According to the previously mentioned 2006 report from Michigan State University's Strategic Marketing Institute, Michigan has the potential to reduce its unemployment rate by almost 1.5 percent over three years by committing to a comprehensive support system for agri-food businesses. Ninety-seven percent of those jobs would come from small- and mid-scale startups like the livestock producers and meat product makers that benefit from Byron Center Meats' size and flexibility.

Such a system of support does not require costly incentives but rather more attention and follow-through on the business development needs of agri-food entrepreneurs. One example is the need that startup livestock operations, sausage makers, and local food distributors have for "right-size" processors like Byron Center Meats. It's an example of how Michigan's smaller scale processors are in position to provide needed pathways, or market infrastructure, between supply and demand for regional, differentiated food products.

Michigan should help indentify locations for similar mid-tier meat processors in other areas of the state in order to open up new market opportunities for more livestock producers. Michigan should also help identify the mid-tier processing needs of other agriculture sectors.

Other Promising Examples in Michigan

❖ The Rise of Michigan Artisanal Cheese

A growing number of Michigan farmers are creating small batch cheeses, made from the milk of cows, goats or sheep. The market for their artisan cheeses is large enough that many Michigan cheese makers can't keep up with the demand.[4] Yet MDA rules and regulations are written for large cheese processors, and small-scale dairy processing equipment is expensive and hard to find.[5]

The recently formed Michigan Cheese Makers Cooperative, with 11 members, including several that are nationally recognized, has organized to promote and market Michigan-made cheeses.[6] The group works in conjunction with, and complements the growing culinary tourism and winery industries in Michigan.

Michigan should support the rise of the emerging artisan cheese sector by ensuring scale-sensitive regulations and encouraging state-sponsored technical centers to provide their expertise and business development resources to this sector.

❖ New Place-Based Brands and Products

Local personality and flavor are 21st century selling points for all sorts of products, from food to clothes to specialized equipment.[7] "Food business districts" can bring entrepreneurs together to develop new place-based products and brands, and local business-to-business connections.

---

[4] Borden, J. (2009) "Cheese Artisans Renew an Age-Old Craft in Michigan." *Kalamazoo Gazette*, June 15.
[5] Moser, L. (2009) "Cheese Maker Blazes New Trail." *Michigan Farmer*, February issue.
[6] Michigan Cheese Makers Cooperative Web site. Home page. http://www.greatlakesgreatcheese.com/
[7] Arieff, A. (2011) "The Future of Manufacturing is Local." *The New York Times*, March 27.

Michigan should encourage M-Tec and other manufacturing-oriented business centers to identify and address the smaller scale equipment and related needs of food and farm entrepreneurs, such as "process engineering," which addresses the efficient and effective flow of materials and products through processing. Attention to such needs among smaller food and farm businesses can result in new processing equipment and products for sale nationally and internationally in addition to solving problems for individual enterprises in Michigan.

❖ Farmers and Processors Renovate for Local Tastes

To meet demand for food from nearby farms, some smaller scale businesses and groups of farmers are renovating facilities to provide the scale of food and farm processing needed. To support their investments and help build markets, local and state economic development authorities can assist with financing, marketing, and other needs.

Farmers near Bear Lake in Manistee County, for example, are preparing to retrofit an old food processing facility for the new use of freezing fruits and vegetables for sales to local schools and other buyers. Nearby Triple D Orchards, a small processing plant in Empire, Leelanau County, has invested $500,000 in an 8,500 square foot cold-pack facility designed to serve the growing niche of smaller scale companies.

With the right attention and incentives, the Bear Lake facility could anchor a regional food hub that would attract related retail, distribution, and packaging businesses. Such hubs could also collaborate with potential "spokes," like Triple D Orchards, for additional services. In addition, a statewide effort to help such entrepreneurs connect and communicate could help build these businesses by helping other entrepreneurs find them.

Michigan can strengthen the emerging market for small and mid-scale farm products and related processing services by supporting peer-to-peer and region-to-region networking that can build business-to-business success. Encouraging local and state economic development authorities to identify and address this sector is key to such "economic gardening" success.

Models for Michigan from Other States

❖ On Farm Biodiesel Processing

Organic Valley, based in Wisconsin, developed an On Farm Biodiesel program in 2008 to enable farmers to process oilseed crops into fuel directly on their farms. The mobile system is housed in a trailer and has equipment to extract, filter, and refine oil into biodiesel as well as to separate out feed meal.[8] Farmers in Wisconsin who have piloted the system with camelina (a small false flax) and sunflowers have seen yields of 80-110 gallons of oil per acre and 1200-1500 pounds of feed meal per acre.[9],[10] Organic Valley studies show that with this system farmers can generate up to 70% of their fuel needs and 50% of their feed meal needs on 10% of their tillable land-base.[11] The system allows farmers to save on feed

---

[8] Cahalan, S. (2009) "Organic Valley Farmers Experiment with Making Biodiesel, Feed Meal." LaCrosse Tribune. Edition: Sunday, October 11, Business News.

[9] Organic Valley Web site; About Us; Sustainability; On-Farm Sustainability. http://www.organicvalley.coop/about-us/sustainability/on-farm-sustainability/

[10] CROPP Cooperative 2009 Annual Report. http://www.organicvalley.coop/fileadmin/pdf/CROPP_Annual_Report_09.pdf

[11] Organic Valley Web site; Why Organic; Research Library; Videos; Bio Fuels. http://www.organicvalley.coop/resources/videos/bio-fuels/

Michigan

Equity • Sustainability • Thriving Economies

Michigan Good Food

CHARTER EXECUTIVE SUMMARY

Barely into a new millennium, the need for a thriving economy, equity and sustainability for all of Michigan and its people rings truer than ever. As part of achieving these goals, we need to grow, sell and eat "good food" – food that is healthy, green, fair and affordable.

By reemphasizing our local and regional food systems, alongside the national and global ones, **we have an opportunity to create a system based on good food in Michigan and achieve a healthier, more prosperous and more equitable state.**

Consider the irony:

- *Michigan has the second most diverse agricultural production in the country, and yet 59 percent of our residents (distributed across each of our 83 counties) live in a place that has inadequate access to the food they need for a healthy daily diet.*

  Currently, it is often easier to buy food from another continent than from a farmer in or near your community.

  Consumer interest in local and farm-direct foods is growing rapidly, and yet mid-sized farms are disappearing at an alarming rate and many farms cannot support themselves without off-farm work.

GOOD FOOD

Healthy
It provides nourishment and enables people to thrive.

Green
It was produced in a manner that is environmentally sustainable.

Fair
No one along the production line was exploited during its creation.

Affordable
All people have access to it.

Adapted from the W.K. Kellogg Foundation

VISION AND GOALS

We envision a thriving economy, equity and sustainability for all of Michigan and its people through a food system rooted in local communities and centered on good food.

By 2020, we believe we can meet or exceed the following goals:

1. *Michigan institutions will source 20 percent of their food products from Michigan growers, producers and processors.*
2. *Michigan farmers will profitably supply 20 percent of all Michigan institutional, retailer and consumer food purchases and be able to pay fair wages to their workers.*
3. *Michigan will generate new agri-food businesses at a rate that enables 20 percent of food purchased in Michigan to come from Michigan.*
4. *Eighty percent of Michigan residents (twice the current level) will have easy access to affordable, fresh, healthy food, 20 percent of which is from Michigan sources.*
5. *Michigan Nutrition Standards will be met by 100 percent of school meals and 75 percent of schools selling food outside school meal programs.*
6. *Michigan schools will incorporate food and agriculture into the pre-K through 12th grade curriculum for all Michigan students and youth will have access to food and agriculture entrepreneurial opportunities.*

WHAT IS THE MICHIGAN GOOD FOOD CHARTER?

The Michigan Good Food Charter presents a vision for Michigan's food and agriculture system to advance its current contribution to the economy, protect our natural resource base, improve our residents' health and help generations of Michigan youth to thrive. The **charter outlines a sequence of steps we can take over the next decade to move us in this direction.**

We need to **enact policies and strategies** that make it just as easy to get food from a nearby farm as from the global marketplace and that will assure all Michiganders have **access to good food** and all Michigan farmers and food businesses have **entrepreneurial opportunities**.

STATEWIDE AGENDA PRIORITIES

TYPE	FOOD SYSTEM ARENA	AGENDA PRIORITY
State agency-based		15. Direct $10 million to regional food supply chain infrastructure development investments through the Michigan state planning and development regions or other regional designations.
		16. Implement a food safety audit cost-share or reimbursement program targeted at small and medium-sized farms and work to ensure that audits are conducted in the context of the farm scale.
		17. Provide financial incentives for farmers and for development of food system infrastructure to support institutional local food purchasing programs.
		18. Develop a farm-to-institution grant program to provide planning, implementation and kitchen or cafeteria equipment grants to maximize the use of locally grown, raised and processed foods in institutional cafeterias.
		19. Direct state agencies to maximize capital access through state-sponsored programs that provide farm financing.
		20. Ensure that all state and higher education business, work force and economic development programs include farming and agriculture in their target audiences for programmatic development, training, investment and technical assistance.
Research-based		21. Contingent upon further market assessment, establish a state meat and poultry inspection program in cooperation with the federal Food Safety and Inspection Services (FSIS) to spur new meat processing infrastructure.
		22. Include Michigan food and agriculture in state marketing efforts, such as the Pure Michigan campaign, to build awareness of the state's great variety and quality of local food products and farm amenities.
		23. Charge business support entities, such as the 18 Michigan Technical Education Centers, with identifying and supporting the equipment and process engineering needs of farmers and other agri-food enterprises, and ensure that food and agriculture are included in state and local economic development plans.
		24. Examine all of Michigan's food- and agriculture-related laws and regulations (food safety, production, processing, retailing, etc.) for provisions that create unnecessary transactions costs and regulatory burdens on low risk businesses and ensure that regulations are applied in a way that acknowledges the diversity of production practices.
		25. Develop systems for collecting and sharing production and market data and other data relevant to regional food supply chain development.

MICHIGAN STATE
UNIVERSITY

PRODUCT
CENTER
BUSINESS INNOVATION IN AGRICULTURE, FOOD AND NATURAL RESOURCES

THE STRATEGIC MARKETING INSTITUTE
WORKING PAPER

The Economic Impact of the Michigan Food Processing Industries

William A. Knudson, Steven Miller and H. Christopher Peterson

Working Paper 01-0910
September 2010

80 AGRICULTURE HALL, MICHIGAN STATE UNIVERSITY, EAST LANSING,

THE ECONOMIC IMPACT OF THE MIGHIGAN FOOD PROCESSING INDUSTRIES

This report analyzes the economic impact of Michigan's food processing industries, with a discussion on barriers to further sector growth. Economic impacts are estimated with industry data based on the 2007 Economic Census (the latest available data) with standard economic impact modeling approaches. To demonstrate potential economic outcomes of expanding food processing in Michigan, several hypothetical sector build-outs are modeled for their direct and secondary economic impacts on production and employment. Additionally, several food processors provide accounts of ongoing challenges for food processors and potential barriers to future growth of the food processing sector in Michigan.

Economic Impact

The total economic impact of food processing in Michigan is estimated to be $25 billion and 134,000 jobs. These impacts include direct, indirect and induced economic activity. Table 1 shows the summary of the impacts.

Table 1: Summary of Economic and Employment Impact of Food Processing

	Within Sector	Total
Economic Impact ($ billions)	14.657	24.971
Impact on Employment	40,828	133,980

Sources: U.S. Census Bureau, IMPLAN, MEDC

The economic impact data is based on the 2007 Economic Census and represents the most recent data available. As such it is likely an underestimate of the current (2010) economic impact of the food processing sector. Nonetheless, the sector has shown fairly strong growth between 2002 and 2007 expanding by 19.8 percent in terms of direct (within sector) impact. This represents a compound annual growth rate of 3.7%.

The Michigan Economic Development Corporation (MEDC) provided 2007 employment counts for this sector using their in-house database of Michigan employment from Economic Modeling Specialists Inc. The MEDC data suggests that employment in food processing industries remained stable or slightly increased over the period.

Table 2 provides a detailed breakdown by processing industry. Implicit in Table 2 is the anticipated economic multiplier of 1.70. This multiplier indicates that every dollar of output in the processing sector creates an additional 70 cents through indirect and induced effects.

While Michigan has a wide range of food processing industries it does not rank particularly high relative to other states in terms of total shipments. Table 3 shows the relative size by state of food processing. Michigan ranks 19th. This is similar to its ranking in terms of farm output. Given the size of the state and its farm sector it is no surprise that California is far and away the largest food processing state in the country. North Carolina's rank shows the importance of animal processing and the fact that tobacco remains a major agri-food processing activity.

Michigan is last in the Great Lakes Region which is comprised of Ohio, Michigan, Indiana, Illinois, Wisconsin and Minnesota. Illinois, Wisconsin and Ohio rank in the top ten states in the US. Given the size of their livestock sectors, these figures reinforce the relative importance of livestock production in food processing activities. With the exception of dairy processing, Michigan does not have a large livestock processing sector, and this lowers its ranking. Conversely, Michigan's large fruit and vegetable sectors boost its ranking.

Impact on Employment

Employment appears to be holding study. Employment in the sector is estimated to be 40,828 with an overall employment impact of 133,980 jobs. It should be noted that employment includes all jobs both full-time and part-time and has not been adjusted to be full-time equivalents (FTEs). Table 4 shows the level of employment by food processing industry. It should be noted that the list of industries in table 4 is somewhat different than those in table 2 because the data sources are different and the list of industries is slightly different.

It should be noted that employment figures in Table 4 may differ from Census estimates for some industries. The MEDC provided employment estimates by industry using databases generated from Economic Modeling Specialists Inc. (emsi); emsi applies employment figures by the Census Bureau and other government statistic reporting agencies to establishment data provided by Dun and Bradstreet to generate industry profiles for the state. Industry multipliers provided by IMPLAN were then used to estimate each industry's contribution to total state employment. Such total impacts account for direct, indirect and induced employment resulting from each industry, where indirect and induced effects include employment in other sectors. While the individual sources of employment (e.g. direct, indirect, induced) for the industries listed above are estimates, the overall employment within each industry is identical to the figure provided by emsi.

Due to the use of different databases, the 2006 processing employment estimate in *The Economic Impact and Potential of Michigan's Agri-Food System* published by the MSU Product Center and the estimate in this paper are not directly comparable. However it does appear that employment in the sector is holding its own and in some industries appears to be increasing. Employment in fruit and vegetable processing appears to be increasing, as well as in the wine, beer, and distilling industries. Animal product processing appears to be holding steady and sugar processing appears to have declined.

Table 4: Food Processing Employment in Michigan		
Industry	Employment within Industry	Total
Pet food manufacturing	47	223
Other animal food manufacturing	359	1,225
Flour milling and malt manufacturing	512	2,504
Starch and vegetable oil manufacturing	259	848
Breakfast cereal manufacturing	3,908	14,628
Sugar manufacturing	1,136	8,132
Chocolate and confectionary manufacturing	769	1,942
Nonchocolate confectionary manufacturing	129	288
Frozen food manufacturing	2,286	3,941
Fruit and vegetable canning/pickling/drying	4,374	15,976
Fluid milk and butter manufacturing	3,196	16,785
Cheese manufacturing	730	4,086
Ice cream and frozen dessert manufacturing	272	1,039
Animal (except poultry) processing	2,554	9,711
Poultry processing	1,762	3,305
Meat processed from carcasses	1,418	5,392
Seafood processing	156	506
Bread and Breakfast product manufacturing	6,969	12,872
Cookie, cracker and pasta manufacturing	1,300	3,542
Tortilla manufacturing	198	340
Snack food manufacturing	1,024	3,692
Coffee and tea manufacturing	680	2,781
Flavoring syrup and concentrate manufacturin	73	394
Seasoning and dressing manufacturing	853	2,389
All other food manfuacturing	904	2,173
Soft drink and ice manufacturing	4,012	12,286
Breweries	344	1,233
Wineries	568	1,623
Distilleries	36	124
Total	40,828	133,980

Sources: U.S. Census 2010, IMPLAN, MEDC

The economic and employment impact of the other activities are smaller, as scale economies of processing facilities are not as large. However large impacts are possible if multiple firms or facilities enter these industries. This is especially true for artisanal cheese production and the fruit and vegetable processing. While the individual impact may be small, if several of these operations were to come into existence the total impact of output and employment may be quite large. It should be noted the artisanal cheese plant is integrated into an existing farm and as a result there is no additional direct employment. Additionally, Michigan's unique microclimates and its proximity to large population centers make the state well suited to expand the processing of fruits and vegetables, especially minimally processed fruits and vegetables.

In conclusion, there are demand drivers and cost considerations that place Michigan in a desirable position. Given an increase in fuel prices and further uncertainty about fuel costs, producing near large population centers has become more cost competitive. Michigan is located within a day's drive of many large cities. The growing interest in locally produced food also dovetails with the interest in reducing transportation costs, and also works to Michigan's advantage. This is particularly the case for minimally processed fruits and vegetables. It should be noted that this advantage applies primarily to areas located near major interstate highways; it is less of an advantage in Northern Michigan.

Barriers to Food Processing

A brief questionnaire was sent to food processors to determine the barriers to food processing. Among the barriers mentioned was taxation. This included income and property taxes as well as the Michigan Business Tax. While food processors rank state taxes high on their list of issues, many non-food sectors also note similar challenges generated by Michigan's tax system.

One barrier that does seem to disproportionately impact the food processing sector is wastewater treatment and regulation. Over regulation by the Department of Environmental Quality (DEQ) now part of Department of Natural Resources and Environment (DNRE) has been identified. This includes the classification of food processing byproducts. One processor believes that "non hazardous process residuals be considered a "valuable byproduct" or "a residual of value" as opposed to being designated as a low hazard solid waste." An example of this is beet process lime which can be used to lower the PH levels in highly acidic soils. Other food processing byproducts can also be used as soil conditioners provided they are applied at agronomic rates. Processors view existing regulatory treatment of such value generating byproducts as an issue to further growth of Michigan's food processing sectors.

Summary

Food processing is an important source of economic activity and employment in Michigan. The overall economic impact of the sector is estimated to be $24.97 billion and the overall impact on employment is estimated to be almost 134,000 jobs. Within the

Appendix: Methodology and Issues of Economic Impact Analysis

IMPLAN, a standard economic impact software package was used to generate indirect and induced employment and sales estimates. IMPLAN utilizes user supplied estimates of the direct sales and/or employment and provides associated indirect and induced effects estimates. Direct effects are the changes in the industries to which a final demand change was made; indirect effects are the changes in inter-industry purchases as the respond to demand of the directly affected industry; and induced effects generally reflect changes household spending resulting from activity generated by the directly impacted industry (MIG, p.102).

IMPLAN estimates are based on the following assumptions:

- Constant returns to scale: production functions are considered linear; if additional output is generated all inputs used to generate that output increase proportionately.
- No supply constraints: an industry has unlimited access to raw materials and its output is limited only by the demand for its products. This assumption can be an issue when unemployment is low and prices are rising. However, given the current state of Michigan's economy additional output can be generated with little, if any impact on input markets. This is especially true of labor and real estate markets.
- Fixed commodity input structure: price changes in one input do not cause a firm to buy substitute goods. Inputs are used in fixed proportion to one another. This is related to the first assumption.
- Homogeneous sector output: the proportion of all commodities produced by an industry remains the same regardless of total output in that industry. An industry won't increase the output of one product without proportionally increasing the output of all its other products. This is also related to the first assumption. (MIG, p.103).

Generally speaking, these assumptions are not excessively binding particularly when analyzing the impacts of undertaking new economic activity on a small or medium scale. Nonetheless they are estimates and the true economic impact and employment levels may be different. Generated impact estimates are at best approximations of the expected true economic impacts.

IMPLAN uses economic and employment figures for each industry from published sources although some estimates are systematically inferred for certain industries due to restrictions on publishing data that would identify particular firms within an industry. Past ratios of employment to sales are often used for inferring total economic activity of additional output or employment. This was done in some meat processing industries, some dairy industries and the animal food industry.

A major benefit of using a software package such as IMPLAN is that provides data for all sectors of the economy within a consistent accounting framework (Leones, Schluter and

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER RESOURCES PROTECTION

Filed with Secretary of State on August 11, 1999.
These rules take effect 15 days after filing with the Secretary of State.

(By authority conferred on the department of environmental quality by sections 3103 and 3106 of Act No. 451 of the Public Acts of 1994, as amended, being §§324.3103 and 324.3106 of the Michigan Compiled Laws)

R 323.2201 to R 323.2211 of the Michigan Administrative Code are amended and R 323.2212 to R 323.2238 are added to the Code as follows:

PART 22. GROUNDWATER QUALITY

R 323.2211 Permit by rule; notification.

Rule 2211. A person may discharge any of the following if the requirements of R 323.2204 and R 323.2212 are met:

(a) Sanitary sewage if the volume of the septic tank or tanks is 6,000 gallons or more or if the flow is more than 6,000 gallons per day, but less than 10,000 gallons per day if the following provisions are complied with, if applicable:
  (i) The sanitary sewage is not mixed with other wastes.
  (ii) The disposal system is designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and the system is approved by the county, district, or city health department that has jurisdiction. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O Box 30630, Lansing, Michigan 48909.
  (iii) For a disposal system constructed, reconstructed, or expanded after adoption of these rules, the discharge is monitored by a flow measurement device. The discharger shall record the average daily flow on a weekly basis and the total flow annually in a log that shall be available for review upon request by the department or the county, district, or city health department that has jurisdiction. A report of the average daily flows and annual total flow shall be submitted to the department by January 31 of each year for the preceding calendar year.

(b) Less than 500 gallons per day of wastewater from a laundromat which is open to the general public and which does not contain a dry cleaning operation if all of the following requirements are met:
  (i) The wastewater is discharged from a system that has a minimum of 2 1,000-gallon septic tanks in series followed by disposal to a tile field.
  (ii) The tanks are pumped when the sludge level reaches 25% of the tank volume.
  (iii) An operational lint filter is maintained on the laundry wastewater discharge line to the system.
  (iv) The tile field has been designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and is approved by the local county, district, or city health department that has jurisdiction or the department. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Water Division,

(g) Water that results from the hydrostatic testing or flushing of a new pipeline or pressure testing of a new tank if both of the following provisions have been met:
  (i) An additive has not been used.
  (ii) The source of the washwater is any of the following:
    (A) A municipal water supply.
    (B) Another water supply that meets state or federal criteria for use as potable water.
    (C) Another source of water meeting the standards of R 323.2222.
    (D) Another source of water approved by the department as meeting the conditions of R 323.2204.

(h) More than 50, but less than 1,000, gallons per day of wastewater from a commercial animal care facility if all of the following provisions have been met:
  (i) The source of the water is any of the following:
    (A) A municipal water supply.
    (B) Another water supply that meets state or federal criteria for use as potable water.
    (C) A source of water meeting the standards of R 323.2222.
    (D) Another source of water approved by the department as meeting the conditions of R 323.2204.
  (ii) The department is notified of any additive in the notification required by R 323.2212 and the discharge does not cause the groundwater to exceed the standard established by R 323.2222 for the additive.
  (iii) The discharge does not occur within 200 feet of a surface water body.

(i) DISCHARGE OF LESS THAN 500 GALLONS PER DAY, AS A DAILY MAXIMUM, OF WASHWATER WITH ADDITIVES FROM FOOD PROCESSING FACILITIES, IF ALL OF THE FOLLOWING PROVISIONS HAVE BEEN MET:
  (I) WASHWATER WITH ADDITIVES IS THE WASTEWATER WHICH RESULTS FROM CLEANING OPERATIONS, TO WHICH DETERGENTS, DISINFECTANTS, SURFACTANTS, OR OTHER CHEMICALS HAVE BEEN ADDED TO ENHANCE, ACCELERATE OR IMPROVE THE CLEANING PROCESS.
  (II) SOAPS, DETERGENTS, OR OTHER ADDITIVES MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS AND ONLY FOR THE INTENDED PURPOSE DESCRIBED IN THE MANUFACTURER'S DIRECTIONS. THIS DOES NOT AUTHORIZE THE DISCHARGE OF A PRODUCT THAT CONTAINS VOLATILE ORGANIC COMPOUNDS, SUCH AS DEGREASERS.
  (III) IF THE PROCESSING INCLUDES SLAUGHTER OF ANIMALS, THE WASTE FROM SLAUGHTERING, I.E., BLOOD, PAUNCH, ETC., MUST BE SEPARATED AND TRANSPORTED OFF SITE FOR PROPER TREATMENT AND DISPOSAL.
  (IV) THE DISCHARGE OF WASTEWATER SHALL ONLY BE ON PROPERTY OWNED BY THE DISCHARGER UNLESS THE DISCHARGER HAS WRITTEN AUTHORIZATION FROM THE LANDOWNER FOR SUCH A DISCHARGE.
  (V) IF THE DISCHARGE IS BY MEANS OF SPRAY IRRIGATION, THE DISCHARGE SHALL BE TO A SITE HAVING A VIABLE VEGETATIVE GROWTH, SUCH AS A PERENNIAL FORAGE CROP. IF VIABLE VEGETATIVE GROWTH CAPABLE OF UTILIZING THE NUTRIENTS SUPPLIED BY THE WASHWATER IS NOT PRESENT AT THE TIME THE WASTEWATER IS APPLIED, AN ADEQUATELY DENSE CROP MUST BE ESTABLISHED IN THE SPRING AS SOON AFTER SNOWMELT AS POSSIBLE.
  (VI) IF THE DISCHARGE IS SUBSURFACE, THE DISPOSAL SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE PUBLICATION ENTITLED "MICHIGAN CRITERIA FOR SUBSURFACE SEWAGE DISPOSAL," APRIL 1994.

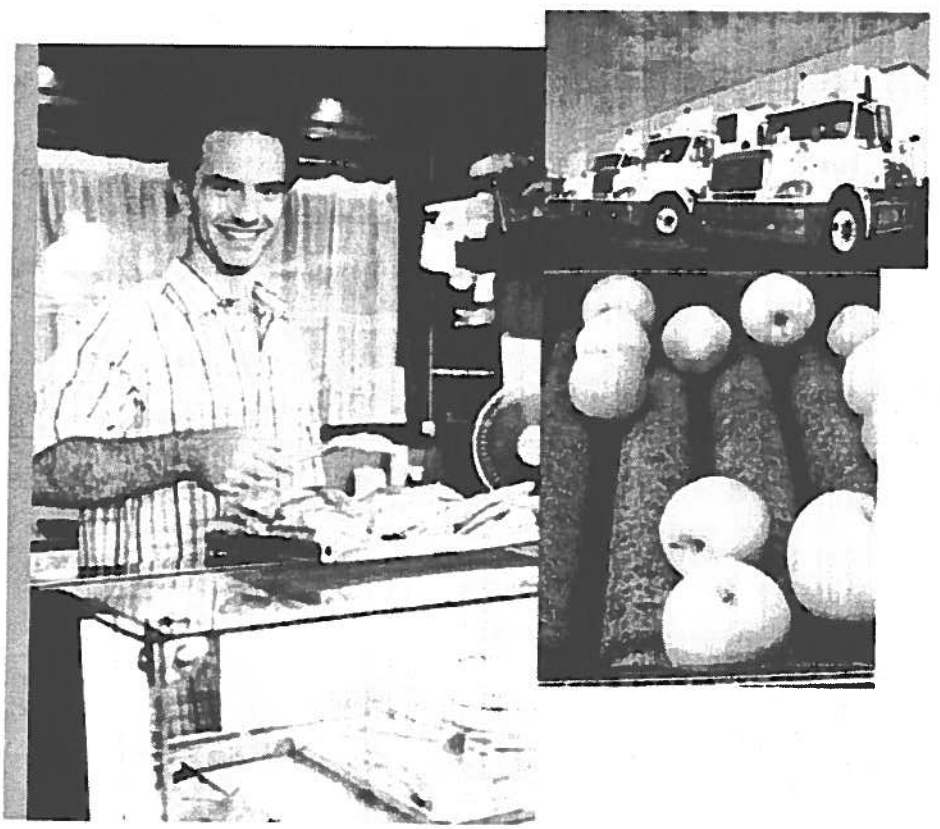
Michigan

Equity • Sustainability • Thriving Economies

FOOD SYSTEM INFRASTRUCTURE:

MICHIGAN GOOD FOOD WORK GROUP REPORT SERIES

Report No. 5 of 5



FOOD SYSTEM INFRASTRUCTURE:

MICHIGAN GOOD FOOD WORK GROUP REPORT SERIES

Report No. 5 of 5

TABLE OF CONTENTS

What is Infrastructure?

Food system infrastructure covers everything needed in the supply chain of activity between the consumer and the producer, be that a farm, fishery or community garden (see Table 1). The supply chain involves such businesses and resources as seed, feed and compost suppliers; equipment repair and fabrication services; food processors; distributors; retail outlets; professional services such as logistics managers and waste handlers; surplus food rescue; and financial, workforce, civic, and land and energy resources. An inadequate food system infrastructure is like an inadequate transportation system of vehicles, roads and bridges - it is difficult to get where you want to go in food and farm markets without reliable food supply chain facilities and services.

Table 1. The World of Food System Infrastructure

Infrastructure covers everything needed for agri-food entrepreneurs to move food from the farm to the plate or to move products, such as compost and timber, from the farm and woodlot to the buyer of those materials. Agri-food supply chains involve:

Production
Inputs such as seed, feed, and harvesting services and equipment

Processing
Activities such as washing and bagging lettuce, bottling, drying and freezing food

Aggregation and Distribution
Things such as marketing cooperatives, storage facilities, brokerage services, logistics management and delivery trucks

Retailing
All those who sell or serve food to consumers, from restaurants, grocery stores and hospitals, to schools, prisons, caterers and fast-food outlets

Marketing
The effort that goes into promoting products such as billboards, coupons, advertising campaigns, packaging materials, branding and more

Capital
Four types of capital are involved: 1) Financial capital in the form of loans, investments and other financing; 2) natural capital of land, water and other ecological resources; 3) the human capital of creativity, labor and other talent, including education and training; and 4) social capital from churches, youth groups, chambers of commerce, etc.

The good food problem we face is that most of the infrastructure needed for local and regional markets, which are growing, has washed out over the years like neglected roads and bridges. We have invested instead in building a superhighway to large national and global markets for Michigan food and farm products. These investments came primarily since the 1940s, when public and industry policy began to focus on producing food that is, as one industry insider describes it, "fast, convenient and cheap," and government and industry leaders advised farms to "get big or get out."

[illegible] P. (2009). "[illegible] Journey from Supply Chain to Value Chain: Results and Lessons Learned from the 2008 National Good Food Network [illegible] Corporation Pilot Project to Source and Sell Good Food." Wallace Center at Winrock International. Retrieved April [illegible], 2010 from [illegible]

Many Layers of Entrepreneurship

Good food entrepreneurship ranges from new supply chain development at the home and neighborhood level to large-volume companies, such as Wal-Mart, reaching out to local producers to satisfy new demand for fresh and local foods.

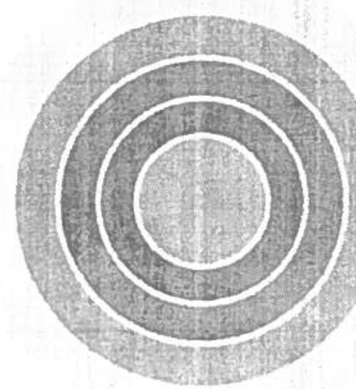
To illustrate this range of entrepreneurship, we use the "Tiers of the Food System" schematic, which outlines the five tiers of the food system. Next, we discuss specific infrastructure challenges and opportunities that Michigan entrepreneurs are navigating and how policymakers can help.

Home and neighborhood demand for healthy, green, fair, affordable food is at the heart of the good food movement, as well as the food system infrastructure now emerging to serve it.

Home and neighborhood examples include backyard gardens and chicken coops, community gardens and community kitchens, cooking and canning classes, and youth farm stands.

These food system developments at the home and neighborhood level are multiplying every day across the country. They reflect a take-charge approach to personal and community concerns about food nutrition, safety, and security

Figure 1. Tiers of the Food System [5]



Home and Neighborhood
Direct to Consumer
Strategic Partnerships
Large Volume
Global Anonymous

DIRECT TO CONSUMER

The supply chain in the next level of the food system, direct-to-consumer, is very short - food is just one step removed from personal production, with exchanges taking place directly between the farm and the consumer.

Direct-to-consumer examples include farmers' markets, mail order, farm stands, community-supported agriculture (CSA) and direct-store-door sales, whereby a farmer or food manufacturer delivers product directly to a store, rather than utilizing a distribution company

Both farms and consumers have turned to direct-to-consumer markets in recent years because the larger food system has failed to deliver many products that consumers want and the profitability that small and midsized farms need. Direct marketing among Michigan farms increased 29 percent from 2002 to 2009. The number of Michigan farmers' markets tripled to about 200 between 2000 and 2008. Michigan now has 85 community-supported agriculture (CSA) operations.[6]

[illegible] Frank Fa[illegible], Ron Doetch, Michael Fields Agricultural Institute, and Steve Stevenson, Center for Integrated Agricultural Systems, University of Wisconsin
http://www.csafarms.org

A New Food Era

The challenge that agri-food entrepreneurs located in all counties and working with all crops face is the fact that little food system infrastructure exists between the roadside-stand direct-marketing option and the large-scale global supply chain option. Not only are facilities such as small-batch processing needed to build shorter, regional supply chains, but also services from enterprises that aggregate farm products. Aggregation allows producers to combine their products to deliver the quantity and consistency that grocers, restaurants and other buyers need. It also calls for midscale washing, grading, storage, packing and similar facilities that, for the most part, no longer exist.

Yet new market opportunities are calling for just such smaller batch, quality food and farm products from Michigan, both fresh and processed, including meats and dairy products. Entrepreneurship is growing at the food system levels of home/neighborhood, direct marketing, strategic partnerships and large-volume. It's growing because demand is growing for food that comes with greater health, environmental, economic and social benefits.

It starts at the home and neighborhood level, with such projects as Benton Harbor GROWS, an effort to build a citywide network of gardens using the knowledge and skills of residents already raising some of their own food.[8] It continues through the direct-marketing level, where restaurants and grocery stores are increasingly purchasing at the Benton Harbor Fruit Market, for example, to offer fresh and local options they cannot find elsewhere. Food system innovation and entrepreneurship are also emerging in supply chains that are longer than direct marketing, at the strategic partnership and large-volume levels, with new distributors and processors going into the local and regional food business.

Shorter regional supply chains are emerging and possible because times have changed, as explained in a 2006 report from the Land Policy Institute at Michigan State University on farmland preservation priorities for the state: "Agriculture is no longer the simple commodity industry it was long ago, when the only avenue for farmer success was increasing productivity and yield. The farmer does not have to be a price taker and can take advantage of unique market opportunities."[9] Similarly, the international food industry think tank, the Hale Group, explains: "The food marketplace has shifted from a supply-driven to a demand-driven environment."[10]

In this new environment, consumer and community demand for healthy, green, fair and affordable food is stimulating entrepreneurship across Michigan's agri-food sector. More and more farms and related food businesses are now working their way to new customers at nearby schools, grocery stores and hospitals as food demand and needs shift.

Some Examples

- New local and regional distributors, such as Locavore Food Distributors in southeastern Michigan, are starting businesses and opening new market channels for Michigan farms, such as Locavore's recent sales to Chicago Public Schools.
- Urban gardeners are selling at farmers markets and supplying restaurants in Detroit under a common "Grown in Detroit" label.[11]

[8] [illegible] (2010). Benton Harbor Grows: Food, Poverty and Community Resilience. Solutions, 1(2), 49-53. Retrieved May 10, 2010 from http://[illegible]660.
[9] [illegible], S. et al. (2006). "Achieving and Funding Goals for Farmland Preservation in Michigan." Land Policy Institute report 2006-[illegible], Michigan State University, p. [illegible].
[10] Ludwig, R. and [illegible] (2010). "Can the World Feed Future Generations?" AgroStrategies. Retrieved April 14, 2010 from http://www.halegroup.com/[illegible]
[11] National Good Food Network (2009). [illegible] The Supply Chain from Michigan Farms to Chicago Schools. National Good Food Network newsletter December issue. Retrieved April 17, 2010 from http://www.ngfn.org/resources/networknews/december-2009#[illegible]
[12] Conner, [illegible] (2008). "[illegible] Regional Food Systems Become [illegible] for Michigan [illegible]" Michigan Land Use Institute. Retrieved April 17, 2010 from [illegible].pdf.

[illegible] JOBS FOR MICHIGAN'S INVESTMENT DOLLARS

The report states that, if Michigan's agri-food sector simply matched the rate of venture establishment in other economic sectors, the state could generate more than 23,000 new jobs per year, including both direct and indirect employment effects.[1] The report notes that nearly half of the jobs could come through relatively small capital investments in small businesses.

When direct and indirect effects are included, the small ventures would generate one job for every $55,714 of capital investment; whereas the large scale agri-food businesses analyzed would generate one job for every $59,537 of capital investment.[2,3] Furthermore, it's important to note that small businesses do not necessarily remain small over their lifespan; many maystart small but grow to become a significant employer in their community.

Neither this report's authors nor the members of the infrastructure work group suggest that small businesses should be Michigan's only concern or goal. Yet the return on investment is remarkably high for the small-scale ventures, which represent 90 percent of the total number of venture establishments that the report projects is possible with increased state commitment and support.

A consumer orientation is key, according to the report: "Fundamental to future success in the agri-food system will be the ability of businesses to innovate and to fully grasp contemporary consumption patterns, their driving forces and growth opportunities. In this regard, small-scale agri-food entrepreneurial ventures that can adapt their ideas, technologies and resources to the ever-changing consumer wants, needs and perceptions will play a significant role in promoting Michigan's economy. The experience of the MSU Product Center shows that potential ventures in this area are very diverse and consist of businesses involved in a wide range of niche products and services including agri-tourism."[4]

One recent study of Midwest sales potential for farms in six states points to promising economic development results in fresh produce marketing.[5] The study examined two scenarios: the effect of Michigan fruit and vegetable farmers supplying the state's in-season demand for 28 common produce items that grow here, and the effect of farms near metropolitan areas with population of 250,000 or more supplying the cities' in-season produce consumption.

Under the first scenario, Michigan could generate 4,448 farm and farm-related retail jobs. This job total is six times greater than the number of jobs that the same amount of land - 75,000 acres - generates from highly subsidized corn and soybean production. Under the second scenario, Michigan could generate 3,262 farm and farm-related retail jobs from just 57,000 acres, compared with 548 jobs in corn and soybean production on the same amount of land.

[1] Ibid.
[2] Ibid. See Exhibit 4, Scenario F, page 41
[3] Note: The per-job investment figures are total capital investment divided by total jobs.
[4] [illegible], H.C., Knudson, W.A., [illegible], G. (2006) "The Economic Impact and Potential of Michigan's Agri-Food System, Strategic Marketing Institute Working Paper." The Product Center at Michigan State University, No. [illegible], January, p.36 http://www.productcenter.[illegible]/Working Economic%20[illegible]%20of%20Michigan%20Agri-Food%20Final%20010906.pdf
[5] Swenson, D. (2010) "Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest." R. Pirog and M. Adams, Eds. Leopold Center for Sustainable Agriculture, Iowa State University. Retrieved April 15, 2010 from [illegible] marketing_files/midwest.html

Infrastructure by the Numbers

"Michigan County and Region Food and Agricultural Systems Profiles," produced in 2009 and available from the Michigan Department of Agriculture, provides the most comprehensive list of current processing, warehousing and other food system infrastructure, along with production data highlights.[24] But information on the change over time in Michigan's food system infrastructure, such as the number and type of food processing facilities, is limited.

The time span and many variables involved make it difficult to collect and categorize data across the spectrum of food system infrastructure. Facilities and services range from feed stores, large animal veterinarians and seed cleaners to loan officers who handle farming financial needs and grocers who serve stressed urban and rural areas.

It's clear from the record of experiences among farms and other agri-food firms that, as producers leave the industry (Michigan lost half of its farms between 1960 and 2002[25],[26]), so do the facilities and services that make up the food system infrastructure. With this infrastructure go the linkages needed to keep food supply chains functioning.

In a 2009 survey of 14 Michigan financial institutions, loan funds and public entities, for example, the C.S. Mott Group for Sustainable Food Systems at Michigan State University found that agricultural lending was a dying function at banks. At least two of the four bank loan officers that continue to offer agriculture loan products voiced concern in the survey about the level of attention that agriculture might receive from their banks once they retired.[27] Yet the number of farms in Michigan increased 5 percent from 2002 to 2007 - that's an increase of 2,700 farms.[28] Among this number are many small farms entering relatively unconventional local and regional markets for food with good food attributes. Not only do these new farmers find few bankers who work in agriculture, but the report also found that they find practically none who are familiar with these emerging market opportunities and changing agri-food business models.

Much of the shift in food system infrastructure occurred in the 1970s, a watershed period between a more local and regional food system in the United States and the current national and global-scale system. Overall, as in other industries, the agri-food sector has experienced significant consolidation since that time, with a few companies controlling many links in their supply chains through vertical and horizontal integration.

This concentration has narrowed market access for producers and severely limited the viability of independent processors and other food system infrastructure businesses. In the seed corn sector, for example, two companies, DuPont/Pioneer and Monsanto, control 58 percent of the market.[29]

Michigan's situation with meat and poultry processing is illustrative. In a 2007 assessment of the feasibility of a new processing plant in northern Michigan, the MSU Strategic Marketing Institute identified a Catch-22 situation.[30] The authors explain: "There are not sufficient numbers of animals to support a processing plant and producers may not be willing to expand livestock production unless there is access to a processor."

[24] Michigan Department of Agriculture. (2009) *Michigan County and Region Food and Agricultural Systems Profiles*. Retrieved April 15, 2010 from http://www.michigan.gov/mda/0,1607,7-125-1568-220573--,00.html
[25] U.S. Department of Agriculture. (1964) "Number of Farms and Land in Farms." Retrieved April 17, 2010 from http://[illegible] Number of Farms [illegible] 1960 [illegible] 1964 [illegible].pdf
[26] U.S. Department of Agriculture. (2007) *2007 Census of Agriculture, Historical Highlights: 2007 and Earlier Census Years*. Table 1. Retrieved April 17, 2010 from http://[illegible]/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Michigan/st26_1_001_001.pdf
[27] Cocciarelli, S. (2009) *Financing Michigan's Sustainable Agriculture: The Availability and Accessibility of Capital for Beginning Farmers*. C.S. Mott Group for Sustainable Food Systems, Michigan State University.
[28] U.S. Department of Agriculture. (2007) *2007 Census of Agriculture, Historical Highlights: 2007 and Earlier Census Years*. Table 1. Retrieved April 17, 2010 from http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Michigan/st26_1_001_001.pdf
[29] Hendrickson, M. and Heffernan, W. (2007) "Concentration of Agricultural Markets." Department of Rural Sociology, University of Missouri, Columbia, Mo. Retrieved from http://www.foodcircles.missouri.edu/07contable.pdf
[30] Knudson, W. and Peterson, C. (2007) "A Feasibility Assessment of a Meat Slaughtering/Processing Plant or Feedlot in Northern Michigan." Product Center at Michigan State University, The Strategic Marketing Institute Working Paper. Retrieved April 14, 2010 from http://www.michigan.gov/documents/mda/MDA_msu_feedlot_feasibility_184592_7.pdf

Strategies for Developing Food System Infrastructure

Bridging wide gaps in food system infrastructure for good food entrepreneurs, both social and private, and working from small-scale to large-scale, will require focused attention on building a more conducive business environment, as well as the businesses and services themselves. We group this needed support and attention in four main strategies:

1. *Communication and networking:*

   Facilitate interaction of buyers, sellers and others in new, shorter supply chains, which require more communication and collaboration than conventional, long-distance supply chains, where food producers and food buyers rarely meet. Entrepreneurs need a collaborative and supportive business environment to innovate and flourish, including a community of peers and clusters of related businesses to work with. This is how Detroit's Eastern Market, for example, originated and how it continues to operate as a hub of value-added activity. Not only do shoppers and farmers get to know one another, but small-scale retail and food processing businesses located nearby also work with the farmers and one another to develop products and pursue market opportunities.

2. *Equipment and facilities:*

   Target business incentives and investment at the new sizes and types of equipment, facilities and services that regional supply chains require to fit their midscale volumes and more identity-preserved products. For a farm to put its name on its value-added product after processing, for example, it must segregate its product through the entire process. Most of Michigan's large-scale processors are not able to accommodate this; their business model is based on mixing products from many farms together. At the same time, most farms cannot afford to set up needed storage, processing and other equipment and facilities on their own. In addition, the new scale and type of equipment they need is often not yet available in the marketplace.

3. *Information and technical assistance:*

   Provide relevant research and other assistance that entrepreneurs need to best navigate emerging good food markets that is not yet available from local and state agencies tasked with business development. Southwestern Michigan's bedding plant industry, for example, has 32 million square feet of greenhouse space sitting mostly idle in the winter. Many growers are interested in adding a winter produce crop for regional markets, but they lack sufficient market data, production research and branding expertise.

4. *Regulation:*

   Reform regulatory approaches to match the level of oversight with the level of relative risk. Small farmers with products ranging from strawberries to squash now face food safety audits that commonly cost $1,000 for each crop. Without reform, costly and confusing food safety rules can prevent farms from serving local and regional good food markets.

coast to coast and beyond. The USDA Agricultural Census records have documented the changes in five-year cycles for all states.[5]

- The infrastructure work group categorized Michigan midsized farms as those between 50 and 999 acres. Census figures from the 2007 USDA Agricultural Census Historical Highlights show a consistent pattern of declining numbers of Michigan farms in this acreage range over a 35-year period.[6] Michigan had 44,965 farms in the 50- to 999-acre category in 1978. The state had 29,100 in 2007, a 35 percent decline.

AGRI-FOOD REUSE OF COMMERCIAL PROPERTY IN MICHIGAN

- New agri-food distribution, processing, equipment manufacturing, storage and other food system infrastructure will show up in the sale and development of commercial properties.
- Several possible sources of information exist. In each case, specific information about agri-food property use will require sources to begin monitoring purchases and redevelopment efforts for agri-food components.
- One source of information is the Michigan Brownfield Redevelopment Program, which involves designation and redevelopment of contaminated, abandoned and blighted properties by a local brownfield redevelopment authority.
- Currently, sources at the Michigan Economic Development Corporation (MEDC) and the Michigan Department of Natural Resources and Environment indicate that neither agency maintains a statewide database of brownfield properties. To date, the responsibility for and task of maintaining lists of qualified and/or funded properties has been left to local and county governments, brownfield redevelopment authorities or other economic development agencies in Michigan's 83 counties.
- A representative of the MEDC recently confirmed, however, that a new and updated Brownfield Redevelopment Authority (BRA) contact list is under development. The expanded and improved visibility could result in an increase in the redevelopment of the properties. The new list is an opportunity for state leaders to encourage BRAs to monitor and report agri-food uses of properties.
- A second source is the Commercial Property Information Exchange (CPIX) with Michigan's Commercial Board of Realtors. The statewide listings are now included in Catalyst, a national listing service and software provider. According to the MEDC, the majority of the properties receiving special treatment or attention tend to be auto manufacturing-related.

INDICATORS OF SEASON-EXTENSION DEVELOPMENT

- Progress in supplying more high-quality Michigan food to Michigan and nearby markets will include installation of more season-extension technology so producers can build revenue with year-round or nearly year-round sales.
- One indicator of season-extension efforts is the number of passive solar greenhouses, or hoophouses, in use. A current baseline estimate of operating hoophouses in Michigan from Adam Montri, outreach specialist at MSU who works with hoophouse farmers across the state is 40 to 45.
- Another potential future source is the USDA Census of Agriculture, which collects information about greenhouse operations. Current data collected, however, mix all greenhouse uses, both floriculture and vegetable production, into one number. Interest in or requests for more detail about greenhouse uses could result in the USDA collecting additional detailed information in the future. The agency has responded to past requests by providing new information, such as in the areas of direct marketing and organic production.

5. U.S. Department of Agriculture. (2007). 2007 Census of Agriculture. U.S. State Level Data: Economic Class of Farm - by Market Value of Agricultural Products Sold and Government Payments: 2007 and 2002. Table 3. Retrieved April 17, 2010 from http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Michigan/st26_1_003_003.pdf

6. U.S. Department of Agriculture. (2007). 2007 Census of Agriculture. Historical Highlights: 2007 and Earlier Census Years. Table 1. Retrieved April 17, 2010 from http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Michigan/st26_1_001_001.pdf

Ideally, the proposed food business districts would involve local and regional authorities working with state-level programmatic support. The resulting designation and plan for organizing a food business district can help communities draw local and federal funding for such projects.

The Michigan Main Street Program for downtown areas pursuing redevelopment is one model of a combined state and local effort.[39] Administered by the Michigan State Housing Development Authority, the program offers state-level criteria and recognition along with technical assistance and convening of local and regional stakeholders to develop plans and pursue resources.

Another model comes from Michigan's experience with its Agricultural Processing Renaissance Zones. Businesses compete for designations out of a limited number available, which come with property tax incentives for a period of time. To better fit good food business and infrastructure development, Michigan could adapt this model to include incentives that work for small and midscale businesses and apply it to groups of businesses and locations beyond industrial zones, such as mixed-use retail areas.

Implementation: Local and regional entities can initiate such food business district designations and programs. State-level leadership, however, would provide important recognition of local and regional food hubs as a valuable economic development strategy. This vision and leadership must also come from the places where most local and regional leaders go for economic development guidance: the Michigan Department of Labor, Energy and Economic Growth and/or the Michigan Economic Development Corporation.

With a vision, a champion and a clear step-by-step program, state leaders could spur and support local and regional investment of time and resources to create food business districts and generate jobs and local and federal investment as a result.

Resistance will come from those in economic development who do not see food and agriculture investments leading to the job growth that Michigan needs. Overcoming that resistance requires recognition and communication of the aforementioned agri-food economic impacts and linking of agri-food entrepreneurship to other economic development strategies, such as the well-accepted "regional place-making" approach to retaining and attracting talent in the knowledge economy era.[41]

The link to regional place-making makes sense, given the power of agri-food entrepreneurship generally and regional food hubs specifically to build amenities in town centers and adjacent rural areas. Urban markets, for example, are destinations that make town centers attractive. As a support to the local farm economy, food business districts and hubs can also help towns gain a competitive edge through agri-tourism and other recreational opportunities on the urban edge and in their region. Quality, place-identified food products in schools, restaurants and home refrigerators further add to pride of place that keeps and brings household and business investments. Food business districts support these amenities as well as the development of new products, sales and services that build local commerce and jobs.

3. *Charge business support entities, such as the 18 Michigan Technical Education Centers (M-TEC) and Michigan State University Extension, with identifying and supporting the equipment and process engineering needs of farmers and other agri-food entrepreneurs and ensure that food and agriculture are included in state and local economic development plans.*

The state's many business and technical assistance entities have capacities in engineering, logistics and other fields that are needed in the food system arena. Existing equipment and processes are designed almost exclusively for the large-scale and global anonymous tiers of the food system. Shorter supply chains require different types and scales of equipment and processes. Technical assistance providers can support food system entrepreneurs in their work to develop equipment and process solutions.

Forms of support could include retrofitting equipment for new uses, designing a mobile meat processing unit for area livestock producers or analyzing the flow of a packing line so a business can introduce a new product to the line cost effectively.

[39] For further information see http://www.michiganmainstreetcenter.com/Program.asp>

[40] Azaroff, S. et al. (2009). "Choosing the Fast or Investing in Our Future: Placemaking for Prosperity in the New Economy." Land Policy Institute, Michigan State University. Retrieved March 29, 2010 from www.landpolicy.msu.edu/ChoosingthePastReport

Overcoming opposition that comes from fiscal considerations will require recognition that the task force can build on analyses that some in the departments have already undertaken, and a cost-benefit approach to communicating the return to state government and the return in economic development for taking this business-building step. State commitment to local and regional food system development is required along with motivational leadership from top officials in the state's legislature and administration.

Overcoming opposition based on the federal nature of many food- and farm-related rules and regulations will require recognizing the state's role as administrator of many federal laws, such as the Clean Water Act, and the extent to which the state already writes rules in compliance with these laws; and recognizing the need for state involvement in developing and/or administering federal rules so that they fit the state's food and farm business reality.

Pending changes in federal food safety rules for produce are an example of opportunities for local and state leaders to both influence final rules and develop a shared position on them that keeps relative risk in the forefront. As of late 2010, Congress was working to finalize the Food Safety Modernization Act (S-510). The pending legislation addresses major problems with food safety in the produce industry but, without the inclusion of amendments to address differences in scales of production, could be onerous for small and medium size farms.[42] Proactive state involvement in final rule development and administration is needed on behalf of small and midsized farms in short supply chains, which pose relatively low risk.

4. *Include Michigan food and agriculture in state marketing, such as the Pure Michigan campaign, to build awareness of the state's great variety and quality of local food products and farm amenities*

Integrate food and agriculture marketing into existing programs with the objective of developing longer term regional branding and programmatic support along the lines of the successful Select Michigan effort, which is now practically defunct because of state budget cuts.[43]

Much of the new food system infrastructure needed to achieve the Michigan Good Food Charter vision will develop out of potential sales of Michigan products to Midwest neighbors, including Canada. Consumers in those areas do not know that Michigan peaches, plums, asparagus and other produce rival any they currently purchase from other places. Even Michigan consumers are largely in the dark on this fact. Good food entrepreneurs are changing these perceptions, but state and local marketing support is needed to help them tell the Michigan story in food markets.

Implementation: Implementation of this agenda priority starts with the natural agri-tourism draw that is already a small part of the state Pure Michigan campaign and local efforts by such entities as convention and visitor bureaus. Growing this food and agriculture component in tourism marketing will require recognition of the extent to which tasty, local food is an attraction for visitors in addition to the typical agri-tourism experience of farm stands and hayrides.

National coverage of Michigan's urban gardening movement, as well as coverage of the state's restaurants, chefs[44] and local foods, will help build involvement by state and local marketing leaders as they recognize Michigan's national good food leadership. Michigan's new Culinary Tourism Alliance is another positive development around which state tourism marketing and food system promotion may come together.[45]

Opposition could come because of limited funding for state promotional campaigns. But the relationship between Michigan marketing and Michigan food and agriculture is growing and, with encouragement from local and state leaders, could expand into creative and collaborative approaches that can benefit Michigan food sales as well as the hospitality industry.

[42] [illegible] (2010). "Senate Passes Food Safety Modernization Act." Blog, November 30. Retrieved December [illegible], 2010 from [illegible]
[43] Cantrell, P., Conner, D. S., Erickcek, G., & Hamm, M. W. (2006). Eat Fresh and Grow Jobs, Michigan. Retrieved from http://www.mottgroup.msu.edu/Portals/0/downloads/EatFresh.pdf
[44] Absolute Michigan. (2010). "James Beard Likes Michigan Chefs." Retrieved March 29, 2010 from http://www.absolutemichigan.com/dig/michigan/james-beard-likes-michigan-chefs/
[45] For further information see http://mich.gov/som/0,1607,7-192-45414-227220--,00.html

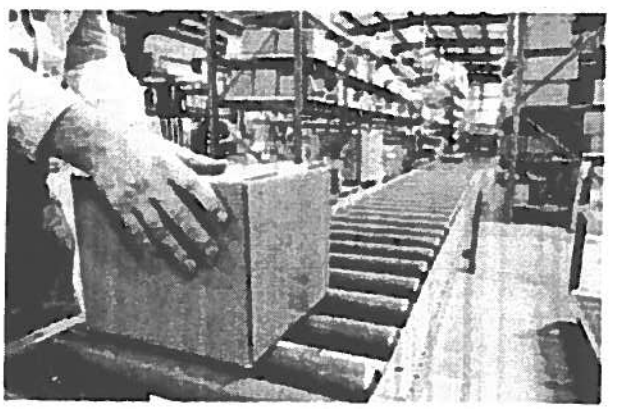
This agenda priority of a strategic regional food system infrastructure investment program would:

- Work through Michigan State Planning and Development Regions or other regional designations. These regional entities would administer the program, oversee development of a strategy for regional food system infrastructure development and authorize proposed regional development authorities.
- Qualified regional development authorities would have demonstrated understanding of and capacity in regional food system development. They would make funds available to public and private initiatives in the region on the basis of a regional strategy informed by food, farm, and other business and community development interests. Competitive applications would require business investment and collaboration that fit the regional strategy.
- Regional authorities would also grant other incentives that come available for food system infrastructure, such as tax credits for equipment purchases.

Michigan's brownfield redevelopment authorities provide a model, with qualified entities and groups of stakeholders working together on a plan for cleanup and re-use of contaminated and blighted properties. They make funds available to competitive projects that carry out those plans.

Michigan State Planning and Development Regions could designate and house the proposed regional food system development authorities, which would apply for and receive authorization on the basis of qualification criteria. These authorities would then work to further private and public projects that fit the region's food system development plan and leverage other dollars as well.

Implementation: Implementation has two parts: moving money to the regional food system infrastructure development initiative and building the program itself, including establishing the process and criteria for development authorities.



Transfer of $10 million from state revenues will require top-level state commitment to food system infrastructure development as an economy- and job-building strategy. Like the implementation strategy for the first agenda priority, this requires demonstrating how food system infrastructure investments will pay off for related economic development efforts such as regional place-making.

State leadership on this idea is also needed to spur the regional food system planning that will form the base of the strategies that regional development authorities will pursue. Groundwork is strong in many areas of Michigan. State recognition, investment and step-by-step program development can bring many budding efforts and projects to fruition. Implementation of 2012 agenda priorities (food business districts, technical assistance to shorter food supply chains) will also generate regional focus on planning for food system infrastructure needs.

Develop systems for collecting and sharing market and other data relevant to regional food supply chain development.

The purpose of this priority is to assist agri-food entrepreneurs and technical assistance providers with information about the size, potential and status of markets for food that has local, regional and other good food attributes.

The Michigan Department of Agriculture can use its long-standing collaboration with the USDA National Agricultural Statistics Service (NASS) to initiate a series of surveys that provide benchmark and ongoing information such as the number of farms engaged in local and regional food markets and the market value of sales and production volume involved. Increasing interest at the USDA in collecting this information will be helpful, such as the agency's addition in recent years of statistics in the Census of Agriculture on direct marketing and organic farming.

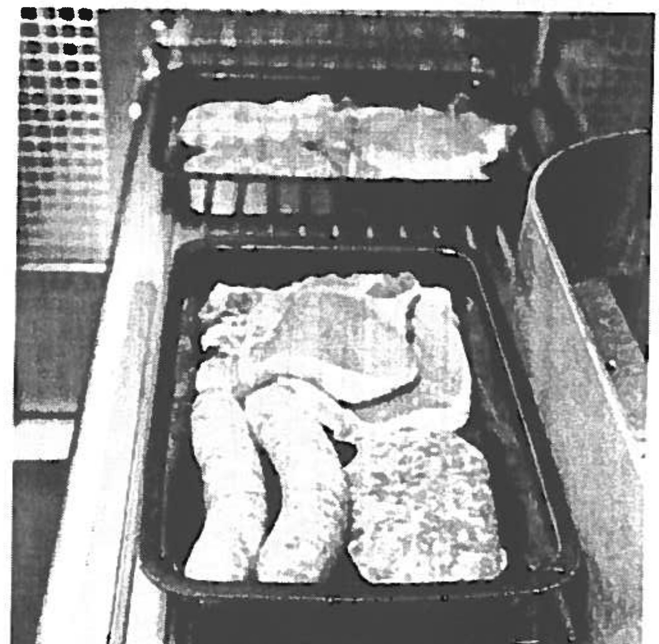
State inspectors can provide one-on-one service to small and midscale meat processing businesses that do not have the ability to hire the technical and legal expertise needed to navigate highly complicated regulations. A state inspection service offers a business development benefit by providing more responsive service than the USDA can provide.

Because federally inspected meat and poultry processing plants are few and far between, many of Michigan's smaller scale livestock producers use "custom-exempt" slaughter plants, which means they must pre-sell (sell prior to slaughter rather than after) meat by halves and quarters. The growth of local and sustainable meat and poultry businesses in Michigan is limited without more federal inspection or equivalent state inspection at slaughter, whether in a fixed facility or in a mobile processing unit.

Mobile units are emerging across the country as a cost-saving option for meat processing entrepreneurs and livestock producers, who often work together to bring about such infrastructure needed to build shorter meat supply chains. In any case, federal inspection is now needed in Michigan for producers to sell the meat retail, unless and until the state reinstates a state meat inspection program.

Implementation: FSIS provides guidelines for states in their establishment of MPI programs that are "at least equal to" federal inspection and reviews such programs regularly to assure they meet this standard.[49] Michigan can, therefore, establish an MPI program by using these guidelines to develop a program that meets federal requirements. The Michigan Department of Agriculture is the primary candidate for operating the program.

Opposition to this proposal will certainly arise because the program will require state funding to operate. The opposition, likely from budget-minded lawmakers, will question whether the investment will generate enough return in meat processing business growth to warrant the outlay. Opposition will also question the need for state inspection if federal inspection is technically available.



Overcoming this opposition will require developing an MPI program that builds on existing MDA expertise and field operations for a moderate-cost program. It is important also to note that the cooperative arrangement with FSIS includes the federal agency covering up to half of the program cost.[50] In a 2002 interview, Dr. Lee Jan, then president of the National Association of State Meat and Food Inspection Directors, explained that the average cost to states after the federal cost share was $1.8 million per year.[51]

Finally, overcoming opposition will also require substantiating the demand and need for such meat inspection services, including the failure of federal inspection services to adequately meet the demand from potential new meat processing businesses. The seventh agenda priority, collection of more local and regional market data, could by 2020 help substantiate that demand, as well as the business and market development value of Michigan investing in state meat inspection.

[49] U.S. Department of Agriculture Food Safety and Inspection Service. (2010) Regulations and Policies: State Inspection Programs. Retrieved April 17, 2010 from http://www.fsis.usda.gov/regulations/state_inspection_programs/index.asp

[50] U.S. Department of Agriculture Food Safety and Inspection Service. (2004) FSIS Directive 5720.2 Revision 3: State Cooperative Inspection Programs. Retrieved March 29, 2010 from http://origin-www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/5720.2Rev3.pdf

[51] [illegible] (2003). "[illegible] Meat Business." Great Lakes Bulletin News Service, January 30. Retrieved March 29, 2010 from http://www.[illegible]